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THE INFLUENCE OF THE USE OF AUDIO-VISUAL MEDIA ON STUDENT LEARNING OUTCOMES ON BIODIVERSITY MATERIAL AT STATE SENIOR HIGH SCHOOL 1 SUKODADI

Nur Faizin[1)], Getrina Putri Norma[2*)], Galih Ikhlasul Amal[3)], Rohana Sufia[4)], Nuriza Dora[5)]

[123]Universitas Negeri Surabaya, Indonesia
[4]Universitas Khairun, Indonesia
[5] Universitas Islam Negeri Sumatera Utara, Indonesia
[*)]email: 24041315011@mhs.unesa.ac.id (Corresponding Author)

Abstrak

The aim of this study is to determine the influence of using Audio-Visual Media on Students' Learning Outcomes in the subject of Biodiversity at SMA N 1 Sukodadi. This research employs a Quasi-Experimental method with a Nonequivalent Control Group Design. The population of this study consists of four classes of eleventh-grade students in Phase F. The sample includes students from class XI C.2 as the control group, receiving conventional treatment, and students from class XI C.3 as the experimental group, receiving audio-visual media treatment. Data collection was carried out through pretests and posttests on students' learning outcomes, complemented by observations and documentation. Data analysis was conducted using parametric statistics with a T-Test. The results of this study indicate that the use of audio-visual media in the experimental class has a significant effect on improving students' learning outcomes in the subject of biodiversity. The average increase in students' learning outcomes (pretest and posttest) in the experimental class is higher than in the control class, with a comparison of 76.2% and 30.58%.

Keyword : *Audio-Visual Media, Student Learning*

INTRODUCTION

Learning is fundamentally a communication process, where information is conveyed from the source to the recipient through a medium. This information includes teachings and educational content from the curriculum, sourced from various parties such as teachers, students, textbook authors, or media producers. In the context of education, media serves as a tool for delivering messages, with the recipients being students or teachers. Erawati (2022) states that learning outcomes are the achievement of educational objectives realized through various student learning experiences, encompassing cognitive, affective, and psychomotor development. In line with this, Winkel, as cited in Purwanto (2016), mentions that learning outcomes also reflect changes in attitudes and behaviors resulting from the learning process students undergo.

Teachers play a crucial role in selecting teaching methods and media, as these decisions directly impact the quality of learning that students receive. The choice of appropriate media can maximize the learning process and introduce a more innovative approach. One such innovation is the use of digital technology-based audiovisual media, which has been shown to effectively assist students in better understanding learning material (Ami, 2021). Learning media serves as a tool to create a conducive and enjoyable learning atmosphere.

Audiovisual media, combining visual and auditory elements, has the advantage of conveying information more effectively. Lestari et al. (2018) explain that this type of media stimulates both the visual and auditory senses simultaneously, thereby strengthening students' understanding. Recent studies have also indicated that audiovisual media positively influences students' motivation and learning outcomes. For instance, Nonisa et al. (2024) found that the use of audiovisual media based on Animaker significantly improved student learning motivation. Another study by Zaniyati & Rohmani (2024) showed that audiovisual media contributed to improving students' learning outcomes in classroom activities. Wibawa (2017) further emphasizes that audiovisual media excels in presenting learning material in a more tangible and comprehensible manner for students.

At SMA Negeri 1 Sukodadi, particularly in the Geography subject for grade XI Fase F, which covers the topic of biodiversity, learning still largely relies on textbooks as the primary medium. The teaching process is predominantly lecture-based, with teachers delivering information verbally. This approach results in low student participation and difficulty in achieving the Minimum Completion Criteria (KKM) of 80. Of the 116 students, only about 60% meet the KKM, while the rest do not. Additionally, students' enthusiasm for learning appears low, with many of them more engaged in talking with their seatmates than following the lesson. This situation highlights the need for innovation in the use of learning media, particularly audiovisual media, which could help address these issues.

Media holds significant Media has significant potential to capture attention, boost enthusiasm, and motivate students in learning (Prasetya, et al, 2025). The use of appropriate media can encourage students to become more actively involved in the learning process, while also enhancing the appeal of the material being presented (Suryani, 2016). Other studies have shown that the integration of audiovisual media in learning can significantly improve learning outcomes compared to conventional teaching methods (Sappaile et al., 2024). Additionally, research by Mutirara Putri et al. (2023) found that the use of technology-based videos, such as Animaker, not only enhanced understanding but also motivated students to actively engage in the learning process. Therefore, this study focuses on "The Impact of Audiovisual Media Usage on Student Learning Outcomes in Biodiversity Topics at SMA Negeri 1 Sukodadi." The main objective of this research is to evaluate how the use of audiovisual media can affect student learning outcomes, as well as to contribute to efforts aimed at improving the quality of education at the school.

By utilizing audiovisual media, it is expected that students will be more actively involved in the learning process, better comprehend the subject matter, and ultimately improve their academic performance. This also underscores the importance of adaptation and innovation in education to overcome the limitations of traditional teaching methods, which often fall short in enhancing student understanding.

METHOD

This study uses a Quasi-Experimental method with a nonequivalent control group design. The research was conducted in two classes, where one class acted as the experimental group, and the other as the control group. The experimental group received treatment in the form of learning with audio-visual media, while the control group did not receive this treatment and used conventional teaching methods.

In this study, both the experimental and control groups were subjected to pre-tests (O_1) and post-tests (O_2). However, only the experimental group received the special treatment (X), while the control group received the conventional treatment (Z). The research design is presented in the following table:

Table 1. The research design is presented in the following table

Group	**Pre-test (O_1)**	**Treatment**	**Post-test (O_2)**
Experiment	O_1	X	O_2
Control	O_1	Z	O_2

The research was conducted from October to December during the first semester of the 2024/2025 academic year. The study was carried out in class XI at SMA N 1 Sukodadi, located at Jl. Pandu No.32, Merjoyo, Sukodadi, Kec. Sukodadi, Kabupaten Lamongan, East Java. The sample was selected using Purposive Sampling technique. To select the class for the sample, the researcher consulted with the subject teacher, and class XI C.2 was chosen as the control group, consisting of 30 students who were taught without using audio-visual media. Meanwhile, class XI C.3 was selected as the experimental group, consisting of 27 students who were taught using audio-visual media.

The data collection techniques used in this study were observation, documentation, and tests. Observations were conducted by monitoring and recording the activities of both the teacher and students during the learning process in the experimental class using an observation sheet. Documentation was used to collect data from the research site, including school records such as the school's history, the condition of teachers and students, and photographs of activities during the study.

The tests conducted were to measure student learning outcomes through the use of audio-visual media on the topic of biodiversity. The pre-test and post-test consisted of 20 multiple-choice questions. Prior to collecting data, the research instrument was tested for validity using a Validity Test, which aimed to determine whether the test items were valid. To obtain the validity of each test item, a correlation formula was used, specifically the product-moment correlation formula:

$$r_{xy} = \frac{N\sum xy - (\sum x).(\sum y)}{\sqrt{[N\sum x^2 - (\sum x)^2 (N\sum y^2) - (\sum y)^2]}}$$

After obtaining the calculation results, they were compared with the Product Moment correlation table at a 1% significance level. If rxy ≥ rtable, the instrument is considered valid. If rxy ≤ rtable, the instrument is considered invalid.

In addition, a Reliability Test was also conducted to determine the reliability (trustworthiness) of the research instrument used. The reliability in this study was calculated using the SPSS 29.0 software. One commonly used formula for reliability is the Kuder-Richardson (KR-20) formula. The higher the value of r11, the more reliable the instrument is. The formula is expressed as follows:

$$r_{11} = \frac{k}{k-1}\left(1 - \frac{\sum pq}{S^2}\right)$$

This study uses data analysis techniques with a t-test to determine whether there is a significant difference between the two sample means being compared. The t-test is used to analyze the comparative hypothesis of two independent samples, namely separated variance and pooled variance. Before performing the t-test, there are two important requirements that must be met, namely the normality test and the homogeneity test. The normality test aims to ensure that the data follows a normal distribution. In this study, the normality test is conducted using the chi-square (χ^2) statistic. The chi-square value is calculated by comparing the frequency obtained from the research data (Fo) with the expected frequency (Fe). The formula for this normality test is as follows:

$$\chi^2 = \sum \frac{(f_o - f_h)^2}{f_h}$$

The homogeneity test aims to determine whether there is equality of variance between the groups of data. In this study, the homogeneity test is conducted using the F-test. The formula used is as follows:

$$F = \frac{\text{Larger Variance}}{\text{Smaller Variance}}$$

Decision Rule:

- if Fcalculated>Fcritical, the data is not homogeneous..
- if Fcalculated≤Fcritical, the data is homogeneous.

The data in this study is interval data, and the hypothesis being tested is comparative. The interpretation of the t-test results is done by comparing the t-calculated value with the t-table value. If t-calculated is equal to or greater than t-table, then the null hypothesis (H_0) is rejected, indicating a significant difference, such as in the application of audiovisual media. On the other hand, if t-calculated is smaller than t-table, then the alternative hypothesis (H_a) is accepted, indicating no significant difference. The basic formula for calculating the t-test value is as follows:

$$t = \frac{M_x - M_y}{\sqrt{\frac{SD_x^2}{N_x} + \frac{SD_y^2}{N_y}}}$$

The results of this analysis provide a statistical foundation for evaluating the impact of using audiovisual media in the context of the study.

RESULTS AND DISCUSSION

In the experimental learning class, the students performed more effectively compared to those in the control group. The difference in learning outcomes can be attributed to the varying learning styles between the experimental and control groups, with the latter not using audiovisual aids. Based on the observation data, the researcher could determine whether the students were in an experimental or controlled learning environment. When teaching in the controlled class did not utilize audiovisual materials, the learning outcomes did not improve. In contrast, experiential learning was carried out using audiovisual materials, resulting in improved learning outcomes for the experimental class. Observations of the teacher also indicated that the teacher followed the lesson plan as outlined and achieved the learning objectives as specified in the achievement indicators.

The research data shows that students in the experimental class learned more effectively than those in the control group. This difference in learning outcomes is caused by the different learning styles of the sample groups, with the experimental group utilizing audiovisual stimuli while the control group did not. Based on the observation data, the researcher could determine whether students were in a controlled or experimental learning environment. When the controlled class did not use audiovisual materials, learning outcomes did not improve. However, the experimental learning environment utilized audiovisual materials, which led to an improvement in learning outcomes for students in that class. Observations made of the teacher showed that the teacher implemented the lesson plan as prescribed and successfully achieved the learning objectives, which included analyzing various plant and animal species in Indonesia and around the world based on ecological characteristics. The achievement of educational goals for improving student learning outcomes by analyzing various plant and animal species in Indonesia and globally based on ecological characteristics is a good approach.

Learning influences student outcomes, which showed greater improvement in achieving goals when audiovisual aids were used compared to before their implementation. SPSS 29.0 was used for data analysis in this research. The results of this data analysis show that the use of audiovisual media has a significantly positive impact on student learning outcomes. This was evident from the higher post-test results of students in the experimental group, who used audiovisual media, compared to the control group that did not.

This is further supported by descriptive results that show the average learning outcome of students in the experimental class was 86.85, with a standard deviation of 8.787, and a minimum score of 70. In contrast, the descriptive results for the control group showed an average score of 70.50, a standard deviation of 9.680, a minimum score of 50, and a maximum score of 85.

Analisis Deskriptif Statistik *Postest* Kelas Eksperimen

Statistics	
Postest	
N	27
Mean	86,85
Std. Deviation	8,787
Variance	77,208
Range	30
Minimum	70
Maximum	100
Sum	2345

(Sumber : Olahan Data Penelitian 2023)

Results of the Paired Samples T-Test

Hasil Uji *Paired Samples T Test*

Paired Samples Test					
Kelas	Mean	Std. Deviation	t	Df	Sig. (2-tailed)
Pre dan Post Kontrol	-13.000	8.052	-8.843	29	.000
Pre dan Post eksperimen	-42.222	14.097	-15.563	26	.000

(Sumber: Olahan Data Penelitian 2022)

As indicated by the Sig. (2-tailed) value of 0.00000 < 0.05, there is a significant difference in the average learning outcomes between the experimental pretest and posttest using audiovisual media. Based on the output from the control group, where the Sig. (2-tailed) value is 0.0000 < 0.05, it can be concluded that there is a significant difference in the average learning outcomes between the control pretest and posttest using conventional media.

Results of the Independent Sample T-Test

Hasil Uji *Independent Sample T Test*

Independent Samples Test						
		F	Sig.	T	Df	Sig. (2-tailed)
Hasil	Equal variances assumed	.101	.752	-6.651	55	.000
	Equal variances not assumed			-6.685	54.994	.000

(Sumber: Olahan Data Penelitian 2022)

In the table above, the Sig. (2-tailed) value of 0.000 < 0.05 indicates a significant difference in the average learning outcomes between students using audiovisual media and those using conventional media. To further understand the average posttest results of the experimental and control groups, refer to the following statistical table:

Hasil *Posttes* Eksperimen Dan Kontrol

Group Statistics				
	Kelas	N	Mean	Std. Deviation
Hasil Belajar	Post Kontrol	30	70.50	9.680
	Post Eksperimen	27	86.85	8.787

(Sumber: Olahan Data Penelitian 2022)

There are several reasons why the use of audiovisual media can be beneficial. First, it can make learning more efficient and encourage students to be more enthusiastic about using materials from the media. The inclusion of videos and other materials can make students more interested in studying the subject further. This contrasts with classrooms that do not use audiovisual materials; in such cases, some students may feel uncomfortable with the methods applied, and the lessons taught can be boring. This lack of engagement may not inspire students in their learning activities, leading to a lower level of enthusiasm in geography classes.

According to the research conducted by Patmawati, P., Hasan, J. R., & Erwinsyah, A. (2024), the application of the Demonstration Method Assisted by Audiovisual Media in the form of Videos was found to improve learning outcomes for grade IV students in science subjects at SDN 9 Limboto. This method, using audiovisual media, was particularly effective in the context of the learning process.

In the study by Yeni Asmara and Agus Susilo (2024), it was concluded that there is an effect of audiovisual media on motivation and learning outcomes of students in the Geography History course at STKIP-PGRI Lubuk Linggau. Similarly, the study by Ridhwan (2016) found that student activity using audiovisual media in social studies lessons on historical

heritage in Indonesia showed an improvement. In Cycle I, the average score was 3.05 (Good), and it increased in Cycle II to 3.52 (Very Good). The learning outcomes of students in Cycle I for the historical heritage material in Indonesia, using audiovisual media, were 73.91% (with 26.87% not reaching the KKM threshold). In Cycle II, the results increased to 86.95% (with the class successfully reaching KKM).

Based on these conclusions, the researchers recommend that future studies using the discovery learning model assisted by audiovisual media should consider the timing and duration of video use. Furthermore, ensure that the devices or media used to deliver the material, such as laptops, projectors, and speakers, are functioning properly. Additionally, the findings from this study can be applied to other fields of study to test the implementation of the discovery learning model with audiovisual media for different subjects (Nur Fahmi, Hadi Soekamto, Ifan Deffinika, 2023). Similarly, the study by Mbau, D., Pamungkas, B. T. T., & Hasan, M. H. (2023) showed that the development of audiovisual-based learning media using Adobe Flash for Geography subjects in grade X at SMA Negeri 1 Rote Barat Laut with the material on the Hydrosphere was successful. The media-based learning approach received positive responses from students and teachers as an effective teaching method.

Thus, from this research, it can be concluded that there is a relationship between the use of audiovisual media and students' learning outcomes in geography classes. Furthermore, the study shows that the experimental group, which used audiovisual media, performed better than the control group, which did not use audiovisual materials in geography education.

CONCLUSION

Based on the previous research and data analysis, the following conclusions can be drawn:

1. The learning outcomes of students in the posttest were higher in the class that utilized audiovisual media in the experiment compared to the class that did not use such media. This is shown by the average pretest score of the experimental class, which was 44.63, increasing to 86.85 in the posttest after the use of audiovisual media in the classroom, with an improvement percentage of 76.2%. In contrast, the average pretest score for the control group was 57.50, which increased to 70.50 in the posttest after conventional teaching, with an improvement of 30.58%.
2. Based on the hypothesis, this is evident in the learning outcomes of the control and experimental classes in the pretest and posttest. After testing, the Sig. (2-tailed) value was found to be between 0.0000 and 0.05, meaning that Ha is accepted and Ho is rejected. From these results, it can be explained that there is an influence of audiovisual media utilization on students' geography learning outcomes.

Based on the results obtained, the researcher provides several recommendations as follows:

1. According to the researcher, the more media used in teaching in the classroom, the more effective the learning process. Among the various types of media,

audiovisual media is one of the most common and impactful in enhancing student learning.

2. Students are encouraged to understand the material in the geography class more deeply in the future, as it is explained through audiovisual media to ensure better learning outcomes.
3. The school should provide adequate facilities and infrastructure to support teachers' teaching activities by utilizing media, particularly audiovisual media.
4. Since the results of other studies have not yet been conclusive, the findings of this research can serve as a reference for future studies or broader research aimed at further developing the use of audiovisual media.

REFERENCES

Ami, R. A. (2021). Optimalisasi Pembelajaran Bahasa Indonesia Menggunakan Media Pembelajaran Berbasis Aplikasi Nearpod. *Bahtera Indonesia; Jurnal Penelitian Bahasa Dan Sastra Indonesia, 6(2)*, 135–148. https://doi.org/10.31943/bi.v6i2.105

Asmara, Y., & Susilo, A. (2023). Pengaruh Media Audio Visual Terhadap Motivasi Dan Hasil Belajar Mahasiswa Pada Matakuliah Geografi Sejarah. *Jurnal Perspektif Pendidikan, 17(1)*, 154–160. https://doi.org/10.31540/jpp.v17i1.2392

Cook, T. D. (1979). *Quasi Experimentation Design& Analysis Issues For Field Setting*. Boston: Houghton Mifflin Company.

Erawati, Desi. (2022). "Meningkatkan Motivasi Dan Hasil Belajar Siswa Melalui Penerapan Model Pembelajaran Problem Based Learning Pada Mata Pelajaran Matematika Kelas 1 SD Negeri 6 Pajar Bulan." *SHEs: Conference Series 5(5)*, 1086–1093.

Fahmi, N., Soekamto, H., & Deffinika, I. (2023). Pengaruh model discovery berbantuan media audio visual terhadap kemampuan berpikir kritis ditinjau dari minat belajar siswa. *Jurnal Integrasi Dan Harmoni Inovatif Ilmu-Ilmu Sosial, 3(10)*, 1081–1097. https://doi.org/10.17977/um063v3i10p1081-1097

Lestari, I. D., Halimatusha'diah, H., & Puji Lestari, F. A. (2018). Penggunaan Media Audio, Visual, Audio Visual, dalam Meningkatkan Pembelajaran kepada Guru-guru. *Jurnal PkM Pengabdian Kepada Masyarakat, 1(01)*, 55. https://doi.org/10.30998/jurnalpkm.v1i01.2361

Mbau, D., Pamungkas, B. T. T., & Hasan, M. H. (2023). Pengembangan Media Pembelajaran Berbasis Audio Visual Adobe Flash Pada Pelajaran Geografi Kelas X di SMA Negeri 1 Rote Barat Laut. *Jurnal Geografi, 19(1)*, 36–53.

Merriam-Webster. (n.d.). Audio visual. In *Merriam-Webster.com dictionary*. Retrieved April 7, 2023, from https://www.merriam-

webster.com/dictionary/audio visual.

Mutirara Putri, Pijariani, Akhyaruddin, and Agus Setyonegoro. 2023. "Pengaruh Media Audiovisual Terhadap Hasil Belajar Menulis Teks Berita Kelas XI SMA Negeri 10 Kota Jambi." *JURNAL PENDIDIKAN TEMATIK DIKDAS* 8(1)(1):56–62. doi: 10.22437/jptd.v8i1.25498.

Nonisa, Amanda, Riza Nafisah, and Rizki Ana. (2024). "The Use of Audio Visual Media on Learning Outcomes in the Merdeka Curriculum." *5(3)*, 203–208. doi: 10.30596/ijems.v5i3.21314.

Patmawati, P., Hasan, J. R., & Erwinsyah, A. (2024). Penerapan Metode Demonstrasi Berbantuan Media Audio Visual Berupa Video Dalam Meningkatkan Hasil Belajar Ipas Pada Siswa. *Dirasatul Ibtidaiyah, 4(1)*, 82-93.

Prasetya, S. P., Hidayati, A., Khamid, A., Lailiyah, F., & Prastiyono, H. P. (2025). The use of three-dimensional media in the shape of the Earth's surface to optimize the knowledge of blind students in social science subjects. British *Journal of Visual Impairment*, 02646196241301052.

Purwanto. (2016). *Evaluasi Hasil Belajar*. Yogyakarta: Pustaka Pelajar.

Rifai, M. H. (2018). Pengaruh Penggunaan Media Audio Visual Terhadap Pemahaman Konsep Mitigasi Bencana Pada Mahasiswa Pendidikan Geografi. *Edudikara: Jurnal Pendidikan Dan Pembelajaran, 3(1)*, 62–69. https://doi.org/10.32585/edudikara.v3i1.79

Sappaile, Baso Intang, Nur Fajrin Maulana Yusuf, Mardiati Mardiati, Masli Nur Cahya Zoraida, and Ediaman Sitepu. (2024). "Effectiveness of Using Audio Visual Media in Improving Student Achievement in Mathematics Learning in Elementary Schools." *Journal Emerging Technologies in Education, 2(1)*, 49–60. doi: 10.70177/jete.v2i1.742.

Setiyawan, H. (2021). Pemanfaatan Media Audio Visual dan Media Gambar Pada Siswa Kelas V. *Jurnal Prakarsa Paedagogia, 3(2)*. https://doi.org/10.24176/jpp.v3i2.5874

Sugiyono, (2017). *Metode Penelitian Kuantitatif, Kualitatif, dan R&d*. Bandung: Alfabeta.

Suryani, N. (2016). Pengembangan Media Pembelajaran Sejarah Berbasis IT. *Sejarah Dan Budaya : Jurnal Sejarah, Budaya, Dan Pengajarannya, 10(2)*, 186–196. https://doi.org/10.17977/um020v10i22016p186

Taniady, V., Setiawan, I., & Waluya, B. (2017). Pengaruh Penggunaan Media Audio Visual Terhadap Pemahaman Konsep Peserta Didik Dalam Pembelajaran Geografi (Penelitian Eksperimen Kuasi Pada Kelas X SMA Labschool UPI Bandung). *Jurnal Geografi Gea, 16(2)*, 132. https://doi.org/10.17509/gea.v16i2.5231

Wibawa, Setya Chendra. (2017). "The Design and Implementation of an Educational Multimedia Interactive Operation System Using Lectora Inspire." *Elinvo (Electronics, Informatics, and Vocational Education) 2(1)*, 74–79. doi: 10.21831/elinvo.v2i1.16633.

Zaniyati, Maharani, and Rohmani Rohmani. (2024). "Analysis of the Effectiveness of Pop-Up Book Media on Science Learning in Elementary Schools." *IJORER: International Journal of Recent Educational Research, 5(4)*, 919–934. doi: 10.46245/ijorer.v5i4.641.